

Claim Amendments

Claims 1, 4, and 18-20 have been amended. Claims 6-17 are canceled. Claims 2, 3, and 5 are unchanged. The following listing of claims replaces all previous versions of the claims in the application.

Listing of Claims

1. (currently amended) A complementary-metal-oxide-semiconductor integrated circuit having a semiconductor substrate with a surface, the integrated circuit comprising:

a metal-oxide-semiconductor (MOS) field-effect transistor having a source, a drain, and a gate having a gate dielectric layer; and

a bipolar transistor having an emitter, a collector, and a base having a base width, wherein the base has:

a base region with a width equal to the base width that separates the emitter and collector and a length, wherein the emitter and collector are at a distance from each other along the surface that is equal to the base width, and

a base conductor that is electrically connected to the base region along its entire length without being blocked by intervening portions of the gate ~~oxide~~ dielectric layer.

2. (original) The complementary-metal-oxide-semiconductor integrated circuit defined in claim 1 wherein the base conductor comprises doped semiconductor.

3. (original) The complementary-metal-oxide-semiconductor integrated circuit defined in claim 1 wherein the base conductor comprises doped semiconductor patterned from a crystalline semiconductor epitaxial layer grown on the base region.

4. (currently amended) The complementary-metal-oxide-semiconductor integrated circuit defined in claim 1 ~~further comprising a semiconductor substrate from which~~ wherein the MOS transistor and bipolar transistor are formed from the semiconductor substrate and ~~wherein~~ wherein the semiconductor substrate comprises a silicon-on-insulator (SOI) substrate.

5. (original) The complementary-metal-oxide-semiconductor integrated circuit defined in claim 1 wherein:

the gate comprises a gate conductor formed on top of the gate dielectric layer from polysilicon and silicide or from metal; and

the base conductor comprises silicide.

6-17 (canceled)

18. (currently amended) A complementary-metal-oxide-semiconductor-integrated-circuit bipolar transistor on a complementary-metal-oxide-semiconductor (CMOS) integrated circuit having a semiconductor substrate with a surface, comprising:

an emitter having an emitter region in the semiconductor substrate of the CMOS integrated circuit;

a collector having a collector region in the semiconductor substrate of the CMOS integrated circuit; and

a base having a base width and having:

a base region in the semiconductor substrate of the CMOS integrated circuit that lies between the emitter region and the collector region, wherein the base region has a length and a width equal to the base width and wherein the emitter region and the collector region are separated by a distance along the surface equal to the base width of the base region, and

a base conductor that lies above the base region and that is electrically connected to the base region along its entire length, wherein the base conductor serves as a path for base current in the bipolar transistor.

19. (currently amended) ~~The bipolar transistor defined in claim 18~~ A complementary-metal-oxide-semiconductor-integrated-circuit bipolar transistor on a complementary-metal-oxide-semiconductor (CMOS) integrated circuit having a semiconductor substrate, comprising:

an emitter having an emitter region in the semiconductor substrate of the CMOS integrated circuit;

a collector having a collector region in the semiconductor substrate of the CMOS integrated circuit; and

a base having:

a base region in the semiconductor substrate of the CMOS integrated circuit that lies between the emitter region and the collector region, wherein the base region has a length and a width and wherein the emitter region and the collector region are separated by the width of the base region, and

a base conductor that lies above the base region and that is electrically connected to the base region along its length, wherein the base conductor serves as a path for base current in the bipolar transistor, wherein the base conductor comprises epitaxial crystalline semiconductor that is doped more heavily than the base region.

20. (currently amended) ~~The bipolar transistor defined in claim 18~~ A complementary-metal-oxide-semiconductor-integrated-circuit bipolar transistor on a complementary-metal-oxide-semiconductor (CMOS) integrated circuit having a semiconductor substrate, comprising:

an emitter having an emitter region in the semiconductor substrate of the CMOS integrated circuit;

a collector having a collector region in the semiconductor substrate of the CMOS integrated circuit; and

a base having:

a base region in the semiconductor substrate of the CMOS integrated circuit that lies between the emitter region and the collector region, wherein the base region has a length and a width and wherein the emitter region and the collector region are separated by the width of the base region,

and

a base conductor that lies above the base region and that is electrically connected to the base region along its length, wherein the base conductor serves as a path for base current in the bipolar transistor, wherein the base conductor comprises a portion of an epitaxial silicon layer and wherein the same epitaxial silicon layer is used to form part of a source and part of a drain of a metal-oxide-semiconductor transistor.